

## Claims

We claim:

- 1 1. A configurable RAID subsystem, comprising:
  - 2 a user data array connected to a user application via a block I/O path; and
  - 3 a configuration array connected to a configuration application via the same
  - 4 block I/O path.
- 1 2. The configurable RAID subsystem of claim 1 wherein the user data array  
2 processes user data access commands executed by the user application, and the  
3 configuration application processes configuration commands, the user data access  
4 commands and the configuration commands communicated to the user data array  
5 and the configuration array respectively via the block I/O path.
- 1 3. The configurable RAID subsystem of claim 1 further comprising:
  - 2 block storage devices to physically store user data of the user data array.
- 1 4. The configurable RAID subsystem of claim 1 wherein the user data array  
2 includes a dynamic identification assigned by the configuration array, and the  
3 configuration array includes a static configuration identification.
- 1 5. The configurable RAID subsystem of claim 1 further comprising:
  - 2 means for assembling and executing a configuration write command in the
  - 3 configuration application;
  - 4 means for processing the configuration write command in the configuration
  - 5 array; and

6 means for returning status on the processing of the configuration write  
7 command to the configuration application via the block I/O path.

1 6. The configurable RAID subsystem of claim 1 wherein the configuration  
2 application reads a predetermined block of the configuration array application to  
3 obtain an associated application identification.

1 7. The configurable RAID subsystem of claim 6 further comprising:

2 means for assembling and executing a configuration write command in the  
3 configuration application, the configuration write command including a request to  
4 read a configuration information data structure and the application identification;

5 means for processing the configuration write command in the configuration  
6 array;

7 means for assembling and executing a configuration read command in the  
8 configuration application, the configuration read command including the  
9 application identification;

10 means for processing the configuration read command in the configuration  
11 array; and

12 means for returning the requested configuration information data structure  
13 and status to the configuration application.

1 8. A method for configuring a RAID subsystem, comprising:

2 processing user data access commands executed by a user application in a  
3 user data array of the RAID subsystem connected to the user application by a block  
4 I/O path; and

5 processing configuration commands executed by a configuration application  
6 in a configuration array of the RAID subsystem connected to the configuration  
7 application via the block I/O path.

1 9. The method of claim 8 further comprising:

2 storing user data of the user data array on block storage devices.

1 10. The method of claim 8 further comprising:

2 assigning a dynamic identification to the user data array by the configuration  
3 array; and

4 assigning a static identification to the configuration array.

1 11. The method of claim 8 further comprising:

2 assembling and executing a configuration write command in the  
3 configuration application;

4 processing the configuration write command in the configuration array; and

5 returning status on the processing of the configuration write command to the  
6 configuration application.

1 12. The method of claim 8 further comprising:

2 reading a predetermined block of the configuration array by the  
3 configuration application to obtain an associated application identification.

1 13. The method of claim 8 further comprising:

2 assembling and executing a configuration write command in the  
3 configuration application, the configuration write command including a request to  
4 read a configuration information data structure and the application identification;

5 processing the configuration write command in the configuration array;  
6 assembling and executing a configuration read command in the  
7 configuration application, the configuration read command including the  
8 application identification;  
9 processing the configuration read command in the configuration array; and  
10 returning the requested configuration information data structure and status to  
11 the configuration application.

1 14. The method of claim 8 further comprising:  
2 receiving a configuration write commands in the configuration array;  
3 locking associated internal data structures of the RAID subsystem;  
4 processing the configuration write command;  
5 unlocking associated internal data structures of the RAID subsystem; and  
6 returning status to the configuration application upon completion of the  
7 processing.

1 15. A configurable RAID subsystem, comprising:  
2 a user data array for processing user data access commands executed by a  
3 user application;  
4 a configuration array for processing configuration commands executed by a  
5 configuration application; and  
6 a single block I/O path connecting the user data array to the user application  
7 and the configuration array to the configuration application.

1 16. The configurable RAID subsystem of claim 15 wherein the user data array  
2 includes a dynamic identification assigned by the configuration array, and the  
3 configuration array includes a static configuration identification.

1 17. The configurable RAID subsystem of claim 15 further comprising:  
2 a plurality of user data arrays each having an associated dynamic  
3 identification assigned by the configuration array; and  
4 a plurality of configuration applications each having an associated application  
5 identification assigned by the configuration array.

1 18. The configurable RAID subsystem of claim 15 wherein the user application  
and the configuration application execute only block I/O write and read commands  
to access the user data array and the configuration array via the block I/O path.